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ABSTRACT

Some studies of young children's understanding of false belief have generated controversy, even to the extent that others' failure to replicate these studies was viewed as problematic. A Vygotskian perspective on internalization enables researchers to reverse the classic developmental competence-performance distinction, and to argue that the current concern with criteria for competence in terms of a functional theory of mind might be replaced with a concern with those aspects of such tasks that make "successful" performances possible. An acknowledgement of the essential nature of intersubjectivity is a necessary prerequisite to sorting out this theoretical and empirical debate. To support these views, this paper reports a study of preschool children that examined whether structuring false belief tasks to provide opportunities for genuine social interaction would provide evidence of the earlier interpersonal roots of a theory of mind. Results support the Vygotskian claim that children may give evidence of an ability to operate under a more sophisticated theory of mind when they are engaged in social interaction with a more competent peer than when they are tested alone in a traditional false belief task. (MM)

Internalization of Social Discourse: A Vygotskian Account of the Development of Young Children's Theories of Mind

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It was with some trepidation that I agreed to participate in this symposium. I am unsure whether my understanding of Vygotskian scholarship warrants my sharing the podium with a such a clearly better informed group of scholars. But, nevertheless, here I am.

I am still just beginning my discovery of the exquisite intricacies of Vygotsky's theoretic work. My interest in his work has derived from several sources. On a personal level my own fascination with socio-cultural diversity in people's thinking makes his socio-genetic developmental perspective most appealing. Secondly, in our attempts to understand the implications recent gender related critiques of mainstream theories of the development of moral thought, I have found the work of Vygotskian and Bahktinian scholars such as Tappan (1991) and Wertsch (1979, 1984, 1985a, 1985b, 1989) most useful. Finally, in my work with my students and colleagues in the area of epistemic development among adolescents and adults these same accounts of the multi-voicedness of human development and experience have been very helpful in our attempts to fashion less essentialistic, socio-historically grounded accounts of people's development as knowers.

So why is this paper on children's developing theories of mind? Well I did my masters thesis research on pre-school children's tacit epistemologies and then abandoned the area as one where the cutting edge distinctions were becoming too finely honed for my taste. Before moving my studies of real people's epistemologies up the lifespan about twenty years I, quite by chance, observed while my daughter, who was 3 years old at the time, participated in Chandler, Fritz, and Hala's (1989) first study of young children's understanding of false belief. I watched while she participated in what was for her an enthralling and deeply involving game with two very attentive "Experimenters". Several years later I was surprised to hear that that study and the one which followed it up (Hala, Chandler, and Fritz, 1991) had generated a great deal of controversy, even to the extent that others' "failure to replicate" these studies was being viewed as problematic.

It is to precisely this question, of what we are to make of the controversy arising from these studies and others like them that I wish to speak in this paper. What we wish to argue is that a Vygotskian re-reading of the particulars of this controversy would not only resolve it but clear the way for a productive new look at the ontogenetic course of young children's social-cognitive competence. In developing this argument I will suggest that a Vygotskian perspective on internalization enables us to reverse the classic developmental competence-performance distinction and argue that the current concern with the criteria for competence (Chandler and Chapman, 1992) in terms of a functional theory of mind might be replaced with a concern with those aspects of such tasks that make "successful" performance possible. In the process of making this point I will also argue that an acknowledgement of the essential nature of the concept of

intersubjectivity is a necessary prerequisite to sorting out this thorny theoretic and empirical debate. Finally, because all who aspire to speak to the questions of the nature and developmental course of children's theories of mind are required to put their empirical money where their theoretic mouths are, I will very quickly present some data that clearly (shows that I am right) supports the viability of applying a Vygotskian corrective to our accounts of children's social-cognitive competence.

Contrasting Claims About Young Children's "Theories" of Mind

The burgeoning research literature focusing upon young children's developing theories of mind indicates that before they are four years of age children experience difficulties understanding the nature of other's false-beliefs (Hogrefe, Wimmer, and Perner, 1986; Perner, 1991; Perner and Wimmer, 1987; Wimmer and Perner 1983). They also confuse or fail to distinguish between appearances and underlying realities (Flavell, 1985; Flavell, Flavell, and Green, 1983; Flavell, Green, and Flavell, 1986). Children under four years of age have also been shown to experience difficulty in tracking the implications of changes in their own representations or understandings of social events (Astington and Gopnick, 1988; Gopnick and Astington, 1988) and in keeping track of whether or not some information they possess represents privileged or general knowledge (Chandler and Boyes, 1982).

By contrast children as young as 2 years of age have been shown to be quite adept at both following and directing others gaze (Lempers, Flavell, and Flavell, 1977) at distinguishing real from pretend in their play (Leslie, 1987), at correctly dropping mental state terms in conversation (Wellman, 1990), and at adjusting their speech when speaking to younger children (Dunn and Kendrik, 1982).

What are we to make of these obviously discrepant claims about the age at which first evidence social-cognitive competence? One could side with the group Chandler and his colleagues (Chandler, Fritz, and Hala, 1989) have labeled as "scoffers" and argue that the laurels of true social-cognitive competence must be withheld until the appearance of the sort of metarepresentational skills described above. On the other hand, one could side with the opposing "booster" group and argue that even two year olds evidence possession of nascent forms of social-cognitive competence.

It is our contention that this apparent gulf between the booster position and the scoffer position exists because our current theories of social-cognitive development and the tasks we use to assess the state of young children's knowledge about what others' know are basically a-social in nature. These theories and the tasks they inform neither account for, acknowledge, nor contain in testing, much in the way of genuine social interaction on the part of the child (save in some cases for that with the experimenter). This is true despite the fact that social interaction is generally held to be a necessary pre-requisite for movement to more mature levels of social-cognitive functioning. This lack of genuine social interaction in children's social-cognitive tasks is particularly problematic in light of results from a number of diverse studies which suggest that the closer such tasks get to incorporating genuine social interaction the better children do on that task (for reviews see Boyes and Pool, 1991 and Lee, 1989).

The premise that we have been attempting to advance and test is that most of the tasks currently being held out as appropriate tests of children's understanding of others knowledge are only secondarily social in that they are based upon a radically individualized view of young children as epistemic subjects (Boyes, in press; Feldman, 1988; Lee, 1989; Perret-Clarmont, 1980) and as such we

are unable to account for why children might do better on those tasks where they are involved in something that closely resembles true social interaction. While believing in the general utility of adopting a Vygotskian derived perspective, we wish to point out the specific utility for the present concern with young children's theories of mind of two of its unique features. The first of these, as already suggested, derives from the socio-genetic nature of Vygotski's theory and permits us to consider radically reversing our usual reading of the relationship between children's social-cognitive competencies and their performances in social-cognitive tasks such as those found in the theory-of-mind literature. The second unique theoretic feature of special interest to us is the fundamental role that it ascribes to intersubjectivity, a concept virtually without counterpart in other theoretic perspectives. Basically it is our contention that it is the current related practices within the thoery of mind literature of arguing that performance follows competence and that intersubjectivity is only a methodological flaw to be avoided that stand in the way of any possible bridge being built between the booster and scoffer camps.

Performance, Competence, and Intersubjectivity

It has been argued elsewhere (Astington and Gopnick, 1988; Boyes, in press; Boyes and Pool, 1991; Gopnick and Astington, 1988; Lee, 1989) that the sort of socio-genetic approach to understanding social-cognitive development offered by Vygotsky (Rogoff, 1990; Vygotsky, 1977, 1978, 1987; Wertsch, 1984, 1985a, 1985b, 1989; Wertsch and Stone, 1984) represents an underexplored but potentially predictively very useful understanding of the nature and developmental course of young children's social knowledge. Such an approach, it is argued, grounds children's unfolding cognitive competence in social interaction and makes possible a more parsimonious account of why children might evidence greater cognitive or social-cognitive maturity when engaged in social interaction than when they are asked to pause and abstractly reflect upon the possible consequences of social interaction.

The role or place accorded social experience in the development and prediction of social cognitive competence within current theories of children's theories of mind (Astington, Harris, and Olson, 1988) is unclear. By contrast, social experience is accorded a central place in Vygotsky's socio-genetic theory of development. Within most current theories of children's developing theories of mind, children's social-cognitive competence is understood to advance as a result of tacit reflection or disequilibration on the part of the child which follows from conflicts arising out of social experience. As Michael Chapman (1992).put it "after such disequilibrium has occurred, the child retires to the privacy of his own mind, so to speak, to accommodate the discrepant information" (p115) Thus, development is understood to proceed as children's current theories no longer fit the data and so are either restructured, exchanged for more advanced models, or adapted in light of newly acquired expertise. A Vygotskian approach, by contrast, holds that what should be of primary concern to developmentalists is the Zone of Proximal Development (Rogoff, 1990; Rogoff & Lave, 1984; Rogoff & Wertsch, 1984) which, simply put, refers to the discrepancy between what a child is capable of alone and what they are capable of with assistance. This view should not, however, be viewed as simply referring to a child's ability to benefit from instruction.

The Zone of Proximal Development is the centerpiece of Vygotsky's theory of social-cognitive development and his account of the socially as opposed to cognitivly grounded process of internalization. What such a theoretic approach to children's developing theories of mind suggests is that accurate or "correct"

insight into the knowledge and belief states of others should arise first in actual social interaction with those other people and that only later, developmentally, should such knowledge be producible in the abstract (i.e., what might a person in this sort of situation think?). By this socio-genetic view children are still understood to acquire individual, abstract, reflective social competence but, rather than acquiring it after and as a result of refection upon social experiences, they "interiorize" knowledge and skills which they first evidence in the midst of real social interaction (Rogoff, 1990).

What this amounts to is the suggestion that we reverse our ontogenetic assumptions about the competence-performance distinction. That is, that instead of viewing all of children's performances in our tasks or in the real world as inferior approximations to their actual underlying competencies, we begin to act on the assumption that their performances in socially supportive, or scaffolded, situations may actually be better than and eventually contribute to increases in their underlying levels of social-cognitive competence. In addition, this shift in interpretive perspective also enables us to begin to attend seriously to the sorts of things that support and promote development within the Zone of Proximal development. Primary among the unique features of this Zone is the implication that it involves the creation and maintanance of an intersubjective connection between those who co-construct the Zone.

This line of argument suggests a number of new avenues of empirical inquiry. One possibility, which is currently under investigation (Boyes and Pool, 1991), is premised upon the Vygotskian claim that all cognitive competence, and especially social-cognitive competence, is evidenced first interpersonally in the rich relational context of ongoing social interaction and is only later found to reside intra-personally as an individually owned competence. While this claim has been investigated in relation to cognitive development (Tudge, 1989,1991) and from a neo-Piagetian perspective (Doise and Mugny, 1984; Perret-Clarmont, 1980) its implications for tasks intended to assess children's functional theories of mind have not been systematically investigated. What it suggests is that children might evidence the metarepresentational competence they appear to lack (prior to four years of age) when tested using the sort of standard false-belief or representational change task designed to make explicit their functional theory of mind if they are tested in the interpersonally richer context of their interactions with a more competent peer. The centrality of the issue of intersubjectivity also suggests the need to more closely attend to the details of the social interactions between child subjects and adult experimenters in these tasks as, in the bulk of the theory of mind tasks used to date, this is the only intersubjective connection they permit.

What was proposed and put to empirical test in one of our studies that I will describe for you is the premise that the nature or quality of social interaction that children participate in as they act as partners discussing what another (i.e., a puppet) knows in a false belief task, will predict their level of epistemic performance in the latter instance when they are asked to discuss what the puppet knows. This amounts to an attempt to "socialize" several false belief tasks used in the Theory of Mind Literature. If, as Vygotskian theory suggests, the necessary components of metarepresentational social knowledge (or a theory of mind) are to be found first in social interaction, then structuring false belief tasks so as to provide opportunities for genuine social interaction should provide evidence of the earlier interpersonal roots of this abstract competence.

In order to investigate this claim, three, four and five-year-old children were individually pretested using several standard false belief tasks. They were then brought together in age pairs and asked to work together and to discuss what a naive observer, a puppet, thought about a restricted portion of the information

avalable to them in the tasks. What such interactions are taken to provide is a window upon the Zone of Proximal development. Interacting with a slightly more competent peer potentially provides the child with a scaffolded (Bruner, 1986) opportunity to experience and, perhaps, evidence aspects of a more advanced epistemic competence than they could produce when tested alone.

So, it was hypothesized that children paired with a more competent peer, as determined by pretest performance, might do better when their responses made in the context of peer interaction are scored. An important caveat on this hypothesis, however, is that this increase in performance should only be observed when these children are engaged in genuine social interaction with their matched peer. For the present purposes, drawing upon the work of Vygotsky and others, genuine social interaction was defined as that in which the children themselves, rather than the experimenter, negotiate and set what the task materials might mean to them or could mean from the puppet's point of view. Thus it is hypothesized that when mismatched pairs of children jointly participate in the setting of the meaning of the task materials over which they interact, the performance of the less mature child may improve in ways that are not simply dismissible as echos of the more advanced child's responses.

Method

Participants. 31 children (17 males) ranging from 3.1 to 5.9 years of age were recruited form two Calgary Day Care centres participated in Study 3. After pre-testing 11 children were dropped from the study due to transitional performance or the lack of an appropriate peer match.

Tasks

Droodles. This task (Chandler and Boyes, 1982; Taylor, 1988) makes use of single frame cartoon drawings portraying a variety of situations, such as a ship coming to save a drowning witch or two elephants extending their trunks toward a single grapefruit. Cardboard masks were constructed which partially covered the picture so that only a restricted, and consequently ambiguous, portion was open to view.

Puzzle. This task uses a series of three piece Puzzles which depict scenes which lend themselves to one description when all pieces of the puzzle are in place and quite another when one puzzle piece is missing (Boyes, 1982). For example, the first two pieces in one puzzle depict a rabbit that seems to be running away from a wolf. The third puzzle piece however depicts a forest fire from which all the animals, including the wolf and rabbit, are fleeing.

Picture Story. In this task, developed by Chandler & Helm (1984), the child views a series of pictures and tells the story they seem to describe. For example, one sequence depicts a little girl who is sad because her father has gone away in an airplane. Later at home, the postman delivers a parcel to her and she opens it happily. However she begins to cry when she unwraps a toy airplane.

The critical issue to be grasped by subjects is that the gift of a toy airplane, normally considered a happy occasion, becomes an occasion for sadness because it reminds her of an unhappy experience.

All children were initially individually pretested using a Puzzle, A Droodle, and a Picture Story task. They were then paired up such that children who failed all pretest tasks were paired with children who had passed all such tasks.

Each pair then interacted as a team on an additional Puzzle, Droodle, and Picture Story task. Each interaction was scored using the scheme developed in study two and each child's performace was scored as a Pass, Fail, or Transitional response.

Finally, each child was post-tested using a further version of each of the three task types used in this study.

It was anticipated that the "less competent" peer in each pair would perfom better in the context of peer interaction than in either the pretest or the post-test. Some pre- to pos-test test gains were expected, thought, in line with the results of study one, any such gains should move the child along the dimension of social veridicality.

Levels of Intersubjectivity

In order to make sense of the nature of children's interactions on these tasks, the responses of four pilot pairs and a subset of interactions from this study (3 pairs) were examined and aIntersubjectivity coding scheme was developed. This coding scheme consists of two general interaction types or styles.

Type 1(A): Non-Interactive. The first style can best be described as "no interaction". Very young subjects, when requested to discuss together the stimuli before them, tended to do so independently, if at all, and often looked to the experimenter for direction. Indeed, a great deal of experimenter input was usually necessary to get any form of response at all. Such children appeared to be not only unaware of what the other person's perspective was, but also unaware that the other was expressing a perspective at all. They were totally unconcerned with the other's beliefs to the extent of unawareness of the other's input in the total process. Consistent with this style of communication, what little interaction that did occur in the present study, occurred between individual subjects and the experimenter, usually taking the form of specific probes to subjects followed by "I don't know" type of responses or of agreeing with anything that the experimenter suggested might be possible.

Type 1(B): Own View, No Compromise. This interactive style was characterized by subjects simply stating their own view, sometimes quite loudly. Such children appeared to be somewhat aware of the other's differing viewpoint but were not overly concerned that it differed from their own. These pairs, although still requiring a fair amount of experimenter direction to keep them on task, did talk at one another but because they tended to hold strongly to and simply state their own beliefs/knowledge they did not appear to be engaged in any genuine social interaction. These subjects did not insist that the other go along with their viewpoint, but did reiterate their own belief continuously and consistently. For instance, in one such pair discussing a Droodle, T4, the fully informed subject continuously stated "It's a witch. That is all it can be." The uninformed child of this pair changed his mind a number of times about the possible identities, but finally held to his belief that it could only be a triangle. The fully informed subject often requested that we "fill in" the uninformed child and reveal the whole stimuli to them.

This style of verbal communication is analogous to what Piaget termed "collective monologues". Piaget noted that very young children, playing side by side, would carry on "conversations" with the other child, without any intermingling of one another's perspectives. Such conversations are best

described as running monologues of the action taking place during play (Flavell, 1985).

Type 2(A): Incorporative. Subjects using this interactive style tended to incorporate both their own and the other's knowledge into their response, hence the label "incorporative". These children interacted in a more obviously social manner with the other member of the pair and were fully aware of the other's point of view. This was evident in the modifications they made when stating their beliefs about the identity of stimuli. Interactions between the children and the experimenter were minimal at this level. A verbatim example best illustrates this style.

> Puzzles Task, Wolf/Rabbit/Fire puzzle described above.
> Uninformed child (UN), "This wolf is trying to catch the bunny and the bunny is running away back to his den and the wolf is running after it to catch it and eat it for lunch."
> Fully informed child (IN), "Right."
> Experimenter (E), "Is that all that is happening?"
> IN, "No, there is a fire and so that's why they are running away."
> UN, "But there is a fire so that one (points to wolf) is trying to get away and while he is trying to get away he is chasing the bunny to have it for lunch!"
> IN, " Yeah, and his tail is burnt and while he is running away from the fire he is chasing after the bunny to its den but he might not get in at the back door but he wants to have the bunny for lunch!"

Responses scored at this level indicated a grasp of the game-like possibilities of the tasks situations. Once they grasped the interpersonal rules of what might best be labeled the "add-on" or "meaning building" game, they played it quite competently.

Type 2(B): Mutuality. A further interactive style, although similar to the above, was distinctly different in terms of the degree of modification that children made to their own verbalized response. This qualification is considered important for it was difficult to determine the extent to which they modified their actual belief or knowledge. However, based on the modifications made to their verbal responses during interaction, such childrens' social graces appeared to be developed to the extent that not only did they verbally acknowledge the other's opinion, but modified their own opinion in the interests of social harmony. In colloquial terms, they "agreed to agree" with the other, attaining a level of mutuality that was acceptable to both. Unlike Level 2, there was no attempt at incorporation. Rather, one or both subjects dismissed part or all of their own initial statements in favour of their partner's or a mutual response. Of particular interest is the fact that some children although functioning at a higher level of epistemic competence than their partner, appeared to go along with what might be objectively considered to be a less mature aspect of the other's response. The outcome of such interactions is clearly a joint construction.

In conditions where one of the children was informed, for example, both children involved in mutual interaction were likely to engage in a sort of "possible meaning generating" game in which a string of possible interpretations of the restricted view of the task stimulus was generated. Those engaged in this game seemed much less concerned, than children at other levels of interaction, that their discussion revolve around, converge upon, or even reference the unrevealed larger picture.

Results

As may be seen from Table 1, these predictions were largely supported. The majortity of children who failed all three tasks at pretest did better in the context of peer interaction, but only when the interactions reflected some mutuality or intersubjectivity.

A number of children showed gains from the pre-test to the post-test and all of those gains conformed to the order predicted by location of those tasks along the proposed dimension of social veridicality.

The results of this study provide support for the Vygotskian claim that children may give evidence of operating under a more sophisticated theory of mind when they are engaged in social interaction with a more competent peer than they are capable of when tested alone in a traditional false belief task. Further, the performance of these mismatched pairs clearly indicates that it is the particular nature of the interaction that these pairs of children engaged in which determines whether or not a facilitative Zone of Proximal Development has been created. Gaining an awarness of the possibility that another 's knowledge and beliefs may be different than one's own and gaining some insight into the nature of those differences, would appear to be fundamentally socially derived competencies. Such competencies may be said to be attained at first tacitly, and later consciously, through their being conspicuously embedded within the discourse of peer-peer and child-adult interaction.

Given that interactions of a mutual sort seem to be directly linked to increases in social-cognitive functioning, future work in this area should examine furhter what goes into making children's interactions with each other mutual interactions. More importantly, what seems needed is a different sort of task analysis of false belief tasks. What these tasks do and do not provide children in the way of rich, veridical social interaction may afford better understanding of the ontogenetic course of young children's social cognitive competencies.

What these results also suggest is that we need to begin to attend to those social interactions in our studies that we have characteristically... that is, those between the experimenter and the child participant. I have come to understand that my daughter wasn't simply having fun participating in an otherwise routine theory of mind testing situation but that she was, rather, happily engaged in the co-construction and maitenance of a Zone of Proximal development. Such Zones, should the intersubjectivity that creates them and the internalization of social competence that results from them be acknowledged, provide the buiding blocks we need to begin to seriously bridge the gap between the boosters and the scoffers. Clearly we need to embark on a great deal of micro-analysic work but the direction that is called for seems clear.

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